



RRRRRRRR	MM	MM	11	PPPPPPPP	UU	UU	TTTTTTTT	SSSSSSSS	EEEEEEEEE	TTTTTTTT
RRRRRRRR	MM	MM	11	PPPPPPPP	UU	UU	TTTTTTTT	SSSSSSSS	EEEEEEEEE	TTTTTTTT
RR RR	RR	MMMM	MMMM	1111	PP PP	UU	UU TT	SS	EE	TT
RR RR	RR	MMMM	MMMM	1111	PP PP	UU	UU TT	SS	EE	TT
RR RR	RR	MM	MM	11	PP PP	UU	UU TT	SS	EE	TT
RR RR	RR	MM	MM	11	PP PP	UU	UU TT	SS	EE	TT
RRRRRRRR	MM	MM	11	PPPPPPPP	UU	UU TT	SSSSSS	EEEEEEE	TT	TT
RRRRRRRR	MM	MM	11	PPPPPPPP	UU	UU TT	SSSSSS	EEEEEEE	TT	TT
RR RR	RR	MM	MM	11	PP	UU	UU TT	SS	EE	TT
RR RR	RR	MM	MM	11	PP	UU	UU TT	SS	EE	TT
RR RR	RR	MM	MM	11	PP	UU	UU TT	SS	EE	TT
RR RR	RR	MM	MM	111111	PP	UUUUUUUUUU	TT	SSSSSSSS	EEEEEEEEE	TT
RR RR	RR	MM	MM	111111	PP	UUUUUUUUUU	TT	SSSSSSSS	EEEEEEEEE	TT

LL	IIIIII	SSSSSSSS
LL	IIIIII	SSSSSSSS
LL	II	SS
LLLLLLLL	IIIIII	SSSSSSSS
LLLLLLLL	IIIIII	SSSSSSSS

P  
--  
Ir  
Cc  
Pa  
S)  
Pa  
S)  
Ps  
Cr  
As  
Tr  
52  
Tr  
36  
24  
  
Ma  
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-g  
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TC  
11  
Tr  
MA

(3) 85  
(4) 111  
(6) 298

DECLARATIONS  
RMSPUTSETUP1  
RMSPROBEREAD - PROBE BUFFER READABILITY

0000 1 \$BEGIN RM1PUTSET,000,RMSRMS1,<SETUP FOR SPUT/\$UPDATE SEQUENTIAL>  
0000 2  
0000 3  
0000 4 \*\*\*\*\*  
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0000 23 \*  
0000 24 \*  
0000 25 \*\*\*\*\*  
0000 26 :

0000 28 :++  
0000 29 Facility: rms32  
0000 30  
0000 31  
0000 32 Abstract: this module performs various setups for  
0000 33 \$put and \$update on the sequential file organization.  
0000 34  
0000 35 Environment: star processor running starlet exec.  
0000 36  
0000 37  
0000 38 Author: L F Laverdure, creation date: 17-FEB-1977  
0000 39  
0000 40 Modified By:  
0000 41  
0000 42 V03-005 DAS0001 David Solomon 08-Feb-1984  
0000 43 Performance enhancement for variable length records.  
0000 44  
0000 45 V03-004 RAS0115 Ron Schaefer 10-Jan-1983  
0000 46 Check for total record size negative (i.e. size > 32767).  
0000 47  
0000 48 V03-003 KBT0416 Keith B. Thompson 30-Nov-1982  
0000 49 Change ifb\$w\_devbufsiz to ifb\$l\_devbufsiz  
0000 50  
0000 51 V03-002 KBT0146 Keith B. Thompson 20-Aug-1982  
0000 52 Reorganize psects  
0000 53  
0000 54 V03-001 KBT0087 Keith B. Thompson 13-Jul-1982  
0000 55 Clean up psects  
0000 56  
0000 57 V02-011 RAS0049 Ron Schaefer 15-Dec-1981  
0000 58 Fix stm terminator check.  
0000 59  
0000 60 V02-010 RAS0028 Ron Schaefer 20-AUG-1981  
0000 61 Change FABSC\_STM11 to iABSC\_STM.  
0000 62  
0000 63 V02-009 RAS0016 Ron Schaefer 31-Jul-1981  
0000 64 Add support for stream format.  
0000 65  
0000 66 V02-008 MCN0003 Maria del C. Nasr 11-Nov-1980  
0000 67 Check that variable length records written to an ANSI tape  
0000 68 are not longer than to 999 bytes, since this is the biggest  
0000 69 number that fits in the record control word.  
0000 70  
0000 71 V02-007 REFORMAT Maria del C. Nasr 24-Jul-1980  
0000 72  
0000 73 V0006 CDS0001 C D Saether 11-MAR-1980  
0000 74 don't calculate record overhead for unit record devices  
0000 75  
0000 76 Revision History:  
0000 77  
0000 78 L F Laverdure, 14-AUG-1978 15:39  
0000 79 long probe fix  
0000 80  
0000 81 :--  
0000 82  
0000 83

```
0000 85      .SBTTL DECLARATIONS
0000 86
0000 87
0000 88 : Include Files:
0000 89 :
0000 90
0000 91
0000 92 : Macros:
0000 93 :
0000 94
0000 95      $DEVDEF
0000 96      $IFBDEF
0000 97      $IRBDEF
0000 98      $FABDEF
0000 99      $RABDEF
0000 100     $RMSDEF
0000 101
0000 102
0000 103 : Equated Symbols:
0000 104 :
0000 105
0000 106
0000 107 : Own Storage:
0000 108 :
0000 109
```

```

0000 111      .SBTTL RM$PUTSETUP1
0000 112
0000 113      ++
0000 114      RM$PUTSETUP1 - This module makes user input and operation
0000 115      valid checks and calculates record overhead size.
0000 116
0000 117      Calling sequence:
0000 118          bsw rm$putsetup1
0000 120
0000 121      Input Parameters:
0000 122
0000 123          r10    ifab addr
0000 124          r9     irab addr
0000 125          r8     rab addr
0000 126
0000 127      Implicit Inputs:
0000 128
0000 129          the contents of the rab and related irab and ifab.
0000 130
0000 131
0000 132      Output Parameters:
0000 133
0000 134          r6     record data length in bytes
0000 135          r5     record address
0000 136          r1     total record length including overhead bytes
0000 137          r0     status code
0000 138
0000 139      Implicit Outputs:
0000 140
0000 141          sequential file org temp.
0000 142          irb$w_rovhdsz: record overhead size in bytes
0000 143          irb$w_rtotsz: total record length including overhead bytes
0000 144
0000 145      Completion Codes:
0000 146
0000 147          standard rms, in particular, either suc, rbf, or rsz.
0000 148
0000 149      Side Effects:
0000 150
0000 151          none
0000 152      --
0000 153
0000 154
0000 155      RM$PUTSETUP1::: STSTPT PUTSET1
0000 156
0006 157
0006 158
0006 159      : get the user record address & size and validate
0006 160
0006 161
55 28 A8 D0 0006 162      MOVL RAB$L_RBF(R8),R5      : get record address
56 22 A8 32 000A 163      CVTWL RAB$W_RSZ(R8),R6      : get record length
2F 19 000E 164      BLSS ERRRSZ                         : negative size invalid
0D 13 0010 165      BEQL CHKSIZ                         : no need to probe a null rec
0200 8F 56 B1 0012 166      CMPW R6,#512                         : long probe needed?
52 1A 0017 167      BGTRU LONG_PROBE                      : branch if yes

```

0019 168 IFNORD R6,(R5),ERRRBF ; probe buffer  
 001F 169  
 001F 170 :  
 001F 171 : make record size checks and compute overhead based on  
 001F 172 : record format type  
 001F 173 :  
 001F 174 :  
 51 D4 001F 175 CHKSIZ: CLRL R1 ; compute record overhead in r1  
 02 91 0021 176 CMPB #FABSC\_VAR,- ; is it var record format?  
 50 AA 0023 177 IFBSB\_RFMOORG(R10)  
 24 12 0025 178 BNEQ NOTVAR ; no, go handle others  
 0027 179  
 0027 180 :  
 0027 181 : variable length - add in size of record length bytes  
 0027 182 :  
 0027 183 :  
 0A 6A E8 0027 184 VARLEN: ASSUME DEV\$V\_REC EQ 0  
 0027 BLBS IFBSL\_PRIM\_DEV(R10), - ; no size for unit record devices  
 03 6A 26 C1 A0 002A 186 LENCHR  
 002A ADDW2 #2,R1 ; normally 2 bytes  
 51 02 A0 0031 187 BBC #IFBSV\_ANSI\_D,(R10), - ; all set unless ansi d  
 60 AA B5 0034 188 LENCHK: ADDW2 #2,R1 ; in which case it's 4  
 6E 13 0037 191 TSTW IFBSW\_MRS(R10) ; omit check if limit is 0  
 60 AA 56 B1 0039 192 BEQL CHKBLR  
 68 1B 003D 193 CMPW R6,IFBSW\_MRS(R10) ; check record length  
 003F 194 BLEQU CHKBLK ; and branch if le max. allowed  
 003F 195  
 003F 196 :  
 003F 197 : record size too big  
 003F 198 :  
 003F 199 :  
 003F 200 ERRRSZ:  
 003F 201 RMSERR RS-  
 0044 202 RSB  
 0045 203  
 0045 204 ERRRBFF:  
 0045 205 RMSERR PSr ; bad user buffer  
 05 004A 206 RSB  
 004B 207  
 004B 208 :  
 004B 209 : dispatch for other record formats.  
 004B 210 :  
 004B 211 :  
 004B 212 NOTVAR: CASE LIMIT=#FABSC\_UDF,- ; based on record format  
 004B 213 SRC=IFBSB\_RFMOORG(R10),-  
 004B 214 TYPE=B,DISPLIST=-  
 004B 215 <UDFLEN,- : FABSC\_UDF  
 004B 216 FIXEDLEN,- : FABSC\_FIX  
 004B 217 10\$,- : FABSC\_VAR  
 004B 218 VFCLEN,- : FABSC\_VFC  
 004B 219 STMLEN,- : FABSC\_STM  
 004B 220 STMLEN,- : FABSC\_STMLF  
 004B 221 STMLEN> : FABSC\_STMCR  
 005E 222  
 005E 223 10\$: RMSTBUG -99 ; bugcheck if we fall through  
 0065 224

RM1PUTSET  
V04-000

SETUP FOR SPUT/\$UPDATE SEQUENTIAL  
RM\$PUTSETUP1

L 8

16-SEP-1984 00:55:00 VAX/VMS Macro V04-00  
5-SEP-1984 16:23:42 [RMS.SRC]RM1PUTSET.MAR;1

Page 6  
(4)

51 SF AA 90 0065 225 VFCLEN: MOVB IFBSB FSZ(R10),R1 ; get fixed header size for vfc  
BC 11 0069 226 BRB VARLEN ; pick up in VAR code

006B 228 :  
 006B 229 : long probe needed subroutine  
 006B 230 :  
 006B 231 :  
 AF 6A 10 006B 232 LONG\_PROBE:  
 AF 50 E8 006D 233 BSBB RM\$PROBEREAD : check readability  
 05 0070 234 BLBS R0,CHKSIZ : all is ok continue  
 0071 235 RSB : else exit  
 0071 236 :  
 0071 237 : stream format record - check whether a DFT must be added  
 0071 238 :  
 0071 239 :  
 0071 240 STMLEN:  
 24 6A E8 0071 241 ASSUME DEV\$V\_REC EQ 0  
 56 B5 0074 242 BLBS IFBSL\_PRIM\_DEV(R10),10\$ : no additional chars for unit-record  
 16 13 0076 243 TSTW R6 : zero len record  
 22 BB 0078 244 BEQL SS : needs a terminator  
 51 FF A546 9E 007A 245 PUSHR #^M<R1,R5> : save size and record addr  
 50 01 D0 007F 246 MOVAB -1(R5)[R6],R1 : setup for term check  
 54 50 AA 9A 0082 247 MOVL #1,R0 : check only last char  
 FF77' 30 0086 248 MOVZBL IFBSB\_RFMORG(R10),R4 : get format type  
 22 BA 0089 249 BSBW RMSSTM TERM : check for terminator  
 0A 50 E8 008B 250 POPR #^M<R1,R5> : restore regs  
 51 B6 008F 251 BLBS R0,10\$ : already have a terminator  
 50 AA 91 0090 252 5S: INCW R1 : add in the DFT size  
 04 0J93 253 CMPB IFBSB\_RFMORG(R10),- : STM format?  
 02 12 J094 254 #FAB\$C\_STM :  
 51 B6 0096 255 BNEQ 10\$ : nope  
 03 6A 26 E1 0098 256 INCW R1 : STM's DFT is 2 bytes long  
 51 04 A0 009C 257 10\$: BBC #IFBV\_ANSI\_D,(R10),20\$ : need count field for ANSI  
 93 11 009F 258 ADDW2 #4,R1 :  
 00A1 259 20\$: BRB LENCHK :  
 00A1 260 :  
 00A1 261 : fixed length record - check its size  
 00A1 262 :  
 00A1 263 :  
 00A1 264 :  
 52 AA 56 B1 00A1 265 FIXEDLEN:  
 98 12 00A5 266 CMPW R6,IFBSW\_LRL(R10) : compare against fixed size  
 00A7 267 BNEQ ERRRSZ : branch if not equal  
 00A7 268 :  
 00A7 269 :  
 00A7 270 : if blk bit set (records can't cross block boundaries) check  
 00A7 271 : that total record size is less than a block  
 00A7 272 :  
 00A7 273 UDFLEN:  
 64 A9 51 B0 00A7 274 CHKBLK: MOVW R1,IRBSW\_ROVHDSZ(R9) : save overhead size  
 51 56 A0 00AB 275 ADDW2 R6,R1 : compute total record size  
 8F 19 00AE 276 BLSS ERRRSZ : bad if neg (=> size>32767)  
 1A 51 AA 03 E1 00B0 277 EBC #FAB\$V\_BLK,IFBSB\_RAT(R10),10\$; branch if no boundary  
 00B5 278 : restriction  
 48 AA 51 B1 00B5 279 CMPW R1,IFBSL\_DEVBUFSIZ(R10) : compare against block size  
 84 1A 00B9 280 BGTRU ERRRSZ : and branch if too big  
 00B8 281 :  
 00B8 282 :  
 00B8 283 : If ANSI\_D record (variable length in ANSI magtape) make sure that  
 00B8 284 : record is not bigger than 9999 bytes.

008B 285 :  
008B 286  
10 6A 26 E1 008B 287 BBC #IFBSV\_ANSI\_D,(R10),10\$ ; branch, if not ANSI\_D  
01 50 AA 91 00BF 288 CMPB IFBSB\_RFMORG(R10),#FABSC\_FIX ; branch, if fixed length  
0A 13 00C3 289 BEQL 10\$  
270F 8F 51 B1 00C5 290 CMPW R1 #9999 : within maximum size?  
03 1B 00CA 291 BLEQU 10\$ : yes  
FF70 31 00CC 292 BRW ERRRSZ : error if not  
66 A9 51 80 00LF 293 10\$: MOVW R1,IRBSW\_RTOTLSZ(R9) : save total record size  
00D3 294 RMSSUC  
05 00D6 295 RSB  
00D7 296

00D7 298 .SBTTL RMSPROBEREAD - PROBE BUFFER READABILITY  
 00D7 299  
 00D7 300 :++  
 00D7 301 RMSPROBEREAD - This routine probes the caller's buffer  
 00D7 302 for readability.  
 00D7 303  
 00D7 304 Calling sequence:  
 00D7 305  
 00D7 306 bsbw rm\$proberead  
 00D7 307  
 00D7 308 Input Parameters:  
 00D7 309  
 00D7 310 r10 ifab addr  
 00D7 311 r9 irab addr  
 00D7 312 r6 size of buffer  
 00D7 313 r5 addr of buffer  
 00D7 314  
 00D7 315 Implicit Inputs:  
 00D7 316  
 00D7 317 irb\$B\_MODE  
 00D7 318  
 00D7 319 outputs:  
 00D7 320  
 00D7 321 r0 status code  
 00D7 322  
 00D7 323 Implicit Outputs:  
 00D7 324  
 00D7 325 none  
 00D7 326  
 00D7 327 condition codes:  
 00D7 328 standard rms, in particular, rbf or suc.  
 00D7 329  
 00D7 330  
 00D7 331 Side Effects:  
 00D7 332  
 00D7 333 none  
 00D7 334  
 00D7 335 --  
 00D7 336  
 00D7 337  
 00D7 338 RM\$PROBEREAD::  
 7E 55 7D 00D7 339 MOVQ R5,-(SP) ; save r5,r6  
 01 DD 00DA 340 PUSHL #1 ; anticipate success  
 56 D5 00DC 341 TSTL R6 ; zero buffer size?  
 1A 13 00DE 342 BEQL EXIT1 ; omit probe if so  
 00EO 343  
 00EO 344 : probe all pages  
 00EO 345  
 00EO 346  
 00EO 347  
 50 FEOO 8F 32 00EO 348 CVTWL #-512,R0 ; get address calc constant  
 00E5 349 10\$: IFNORD R6,(R5),ERKRBFI,-  
 00E5 350 IRB\$B\_MODE(R9)  
 56 55 50 C2 00EC 351 SUBL2 R0,R5 ; branch if not readable  
 6640 352 MOVAW (R6)[R0],R6 ; get address of next page  
 FO 14 00F3 353 BGTR 10\$ ; calculate new length  
 56 50 C2 00F5 354 SUBL2 R0,R6 ; continue probing if positive  
 ; need to handle last page?

```
0061 EB 14 00F8 355    BGTR   10$          ; branch if yes
      BF 00FA 356 EXIT1: POPR  #^M<R0,R5,R6> ; restore buffer desc. & status
      05 00FE 357             RSB
      00FF 358
      00FF 359
      00FF 360 ; probe failure - set error code
      00FF 361 :
      00FF 362
      00FF 363 ERRRBFI:
      00FF 364             RMSERR RBF,(SP)
F4   11 0104 365         BRB    EXIT1
      0106 366
      0106 367         .END
```

```

$$.PSECT EP
$$RMSTEST
$$RMS_PBUGCHK
$$RMS_TBUGCHK
$$RMS_UMODE
CHKBLK
CHKSIZ
DEVSVC REC
ERRRBPF
ERRRBFI
ERRRSZ
EXIT1
FABSC_FIX
FABSC_STM
FABSC_UDF
FABSC_VAR
FABSV_BLK
FIXEDLEN
IFBSB_FSZ
IFBSB_RAT
IFBSB_RFMOrg
IFBSL_DEVBUFSIZ
IFBSL_PRIM_DEV
IFBSV_ANSI_D
IFBSW_LRL
IFBSW_MRS
IRBSB_MODE
IRBSW_ROVHDsz
IRBSW_RTOTLSz
LENCHR
LONG PROBE
NOTVAR
PIOSA_TRACE
RABSL_RBF
RABSW_RSZ
RMSBUG
RMSPROBEREAD
RMSPUTSETUP1
RMSSTM TERM
RMSS_RBF
RMSS_RSZ
STMLEN
TPTSL_PUTSET1
UDFLER
VARLEN
VFCLEN

```

+-----+  
! Psect synopsis !  
+-----+

## PSECT name

```

-----
. ABS .
RMSRMS1
SABSS

```

## Allocation

	PSECT No.	Attributes
07000000 ( 0.)	00 ( 0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
0v900106 ( 262.)	01 ( 1.)	PIC USR CON REL GBL NOSHR EXE RD NOWRT NOVEC BYTE
00000000 ( 0.)	02 ( 2.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE

```
+-----+
! Performance indicators !
+-----+
```

Phase	Page faults	CPU Time	Elapsed Time
Initialization	40	00:00:00.11	00:00:00.97
Command processing	140	00:00:00.75	00:00:03.80
Pass 1	304	00:00:09.48	00:00:28.63
Symbol table sort	0	00:00:01.22	00:00:01.80
Pass 2	74	00:00:01.92	00:00:04.37
Symbol table output	6	00:00:00.09	00:00:00.22
Psect synopsis output	2	00:00:00.03	00:00:00.08
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	568	00:00:13.60	00:00:39.96

The working set limit was 1500 pages.

52606 bytes (103 pages) of virtual memory were used to buffer the intermediate code.

There were 50 pages of symbol table space allocated to hold 1022 non-local and 8 local symbols.

367 source lines were read in Pass 1, producing 13 object records in Pass 2.

24 pages of virtual memory were used to define 23 macros.

```
+-----+
! Macro library statistics !
+-----+
```

Macro library name	Macros defined
\$255\$DUA28:[RMS.OBJ]RMS.MLB;1	12
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	2
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	5
TOTALS (all libraries)	19

1152 GETS were required to define 19 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LISS:RM1PUTSET/OBJ=OBJ\$:RM1PUTSET MSRC\$:\$RM1PUTSET/UPDATE=(ENH\$:\$RM1PUTSET)+EXECMLS\$LIB+LIB\$:\$RMS\$LIB

0322 AH-BT13A-SE  
VAX/VMS V4.0

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RM1PUTREC  
LIS

RM1PUTSET  
LIS

RM1RELBLK  
LIS      RM1SEQXFR  
LIS

RM1UPDATE  
LIS

RM1NXTBLK  
LIS

RM1PUTBLD  
LIS

RM1PUT  
LIS

RM2CONN  
LIS

RM1OPEN  
LIS

RM1WTLIST  
LIS

RM1STMFT  
LIS